

## TRANSPORTATION DECISIONS

# Comparing Transportation Options

*Detailed practice, calculation, decision-making, and assessment*

|                                                                                                                                             |                           |                                      |                         |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------|-------------------------|
| <b>GRADES</b><br>9-12                                                                                                                       | <b>TIME</b><br>2 x 42 min | <b>GROUPING</b><br>I / pairs / whole | <b>PRODUCT</b><br>Brief |
| <b>YOUR CHALLENGE</b> Compare monthly cost, travel time, reliability, access, and backup needs across three fictional transportation plans. |                           |                                      |                         |

## Transportation Costs Include Money, Time, Access, and Risk

Transportation decisions affect a budget and a daily schedule. A useful comparison includes recurring and occasional costs, time, reliability, route or parking access, weather, safety, and the ability to handle disruptions.

| Term                                                                                                                                                                                                               | Student-friendly meaning                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Recurring cost                                                                                                                                                                                                     | Expense expected each month.                 |
| Variable cost                                                                                                                                                                                                      | Expense that changes with use or conditions. |
| Maintenance reserve                                                                                                                                                                                                | Money set aside for expected upkeep.         |
| Reliability                                                                                                                                                                                                        | Likelihood the option works when needed.     |
| Opportunity cost                                                                                                                                                                                                   | Value of the next-best use of time or money. |
| Backup plan                                                                                                                                                                                                        | Alternative used when the main option fails. |
| <b>CLASSROOM USE</b> All people, employers, figures, brackets, and documents in this packet are fictional. Never place a real Social Security number, employer ID, bank number, or tax document in classroom work. |                                              |

# Part 1 - Define Transportation Requirements

Nia travels to work and school. Convert needs into fair comparison criteria.

| Factor                              | Need / preference | Evidence | Rule |
|-------------------------------------|-------------------|----------|------|
| Arrive by 8:00 a.m.                 |                   |          |      |
| Monthly budget \$650                |                   |          |      |
| Available evenings                  |                   |          |      |
| Carry sports equipment twice weekly |                   |          |      |
| Emergency backup                    |                   |          |      |

Which requirements are essential? Which depend on a schedule or service that can change?

Part 2 - Calculate Monthly Transportation Cost

Use 4.33 weeks per month.

| Cost                   | Car   | Transit | Bike + transit |
|------------------------|-------|---------|----------------|
| Payment/pass/equipment | \$310 | \$132   | \$65           |
| Insurance              | \$190 | \$0     | \$0            |
| Fuel/fare add-ons      | \$115 | \$25    | \$45           |
| Maintenance reserve    | \$75  | \$0     | \$25           |
| Parking/lock/storage   | \$80  | \$0     | \$20           |
| Monthly total          |       |         |                |

Calculate each total and compare with the \$650 budget.

Part 3 - Calculate Monthly Travel Time

Nia makes 20 round trips per month.

| Option         | Minutes per round trip | Monthly minutes | Monthly hours |
|----------------|------------------------|-----------------|---------------|
| Car            | 58                     |                 |               |
| Transit        | 92                     |                 |               |
| Bike + transit | 76                     |                 |               |

Calculate hours and compare time saved with added cost. Do not assign a dollar value unless an assumption is stated.

## Part 4 - Stress-Test Each Option

Consider a late shift, bad weather, a service delay, and an unexpected repair.

| Scenario             | Car response | Transit response | Bike + transit response | Backup |
|----------------------|--------------|------------------|-------------------------|--------|
| Late shift           |              |                  |                         |        |
| Heavy rain           |              |                  |                         |        |
| Three-day repair     |              |                  |                         |        |
| Service cancellation |              |                  |                         |        |

Which option needs the strongest backup plan? Which risk could create the largest surprise cost?

## Part 5 - Write a Transportation Recommendation

Nia has \$700 in emergency savings and values evening availability.

| Decision check                 | My evidence |
|--------------------------------|-------------|
| Monthly cost                   |             |
| Budget fit                     |             |
| Monthly travel time            |             |
| Evening access                 |             |
| Equipment need                 |             |
| Reliability risks              |             |
| Backup plan                    |             |
| Recommendation with limitation |             |

Write 150-200 words with at least four figures and three current facts to verify.